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Code Number 86



**INDIAN SCHOOL MUSCAT
FINAL TERM EXAMINATION
SCIENCE**

CLASS: IX
22.02.2018

Sub. Code: 086

Time Allotted: 3 Hrs
Max. Marks: 80

General Instructions:

- (i) The question paper comprises two sections, A and B. You are to attempt both the sections.
- (ii) All questions are compulsory.
- (iii) All questions of Section-A and B are to be attempted separately.
- (iv) There is an internal choice in two questions of three marks each and one question of five marks.
- (v) Question numbers 1 and 2 in Section-A are one mark question. They are to be answered in one word or in one sentence.
- (vi) Question numbers 3 to 5 in Section- A are two marks questions. These are to be answered in 30 words each.
- (vii) Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.
- (viii) Question numbers 16 to 21 in Section-A are 5 marks questions. These are to be answered in 70 words each.
- (ix) Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief.

SECTION - A

1. Name the organism used in the preparation of vermicompost 1
2. Name two processes which show the motion of particles in matter. 1
3. (a) Give one similarity & one difference between a pair of isotopes. 2
(b) What is the use of the isotope Cobalt-60?
4. (a) State Archimedes principal. 2
(b) Give two applications of Archimedes principal.

5. An object of mass 40Kg is raised to a height of 5m above the ground. What is its potential energy? 2
If the object is allowed to fall, find its kinetic energy when it is half – way down.
6. Give reasons: 3
- a) We sweat more on a humid day.
 - b) Water in earthen pot becomes cool during summer.
 - c) Solids generally lack the property of diffusion.

OR

- a) How will you convert a gas into liquid?
 - b) Give two differences between evaporation & boiling.
 - c) Define the term latent heat of fusion.
7. a) Write three characteristics of a true solution. 3
- b) Name a solution in the i) solid state ii) Liquid state iii) gaseous state.
8. a) What is smog? 3
- b) What is the role of plants in controlling air pollution and flood?
9. (a) If the acceleration of the particle is constant in magnitude but not in direction, what type of path 3
does the particle follow.
- (b) A train is traveling at a speed of 90kmph. Brakes are applied so as to produce a uniform
acceleration of -0.5ms^{-2} . Find how far the train will go before it is brought to rest?
10. (a) State Universal law of gravitation. 3
- (b) Derive an expression for gravitational force between two bodies.

OR

- (a) State two factors on which gravitational force between two objects depends.
 - (b) The gravitational force between two objects is 400N. How should the distance between the
objects be changed so that force between them becomes 100N?
11. (a) which wave property determines: (i) loudness and (ii) pitch 3
- (b) How are the wavelength and frequency of a sound wave related to its speed?
- (c) The frequency of a source of sound is 100Hz. How many times does it vibrate
in a minute?

12. a) What are the desirable agronomic characteristics for crop improvement? 3
 b) Mention any two preventive measures which are taken before storing the food grain.
13. What are the limitations in the approaches dealing with infectious diseases. Explain three limitations? 3
14. Draw a diagram depicting nitrogen cycle in the biosphere. 3

OR

Draw a diagram depicting carbon cycle in the biosphere

15. a) Bacteria do not have chloroplast but some bacteria are photoautotrophic in nature and perform photosynthesis. Which part of the bacterial cell performs this function? 3
 b) If cells of onion peel and RBC are separately placed in hypotonic solution. What will happen to the cells? Explain the reason for your answer.
16. (a) Why does a gun recoil backward when a bullet is fired from it? 5
 (b) Define momentum of a body and give its SI unit.
 (c) A truck starts from rest and rolls down a hill with a constant acceleration. It travels a distance of 400m in 20s. Find its acceleration. Find the force acting on it, if its mass is 7 metric tonnes.
17. (a) Define Kinetic energy. 5
 (b) Derive an expression for the kinetic energy of an object of mass m moving with a velocity v .
 (c) What is the work to be done to increase the velocity of a car from 36kmph to 54kmph. if the mass of the car is 1500Kg?
18. a) Define the terms: (i)Unified mass (ii)Formula unit mass (iii)Chemical Formula 5
 b) What is the mass of 10moles of Calcium carbonate? (Atomic mass of Ca= 40u, C=12u, O=16u)

OR

- a) Define (i) atom (ii) molecule (iii) mole
- b) An element [X] has valency 3. What is the formula of its
 (i) Oxide (ii) Chloride
19. a) The average atomic mass of a sample of an element [X] is 16.2u. What are the % of isotopes $^{16}\text{[X]}_8$ & $^{18}\text{[X]}_8$ in the sample. 5
 b) Explain with one example
 i) Atomic number ii) Mass number iii) Valence electron
20. a) Draw the diagram showing the section of phloem complex tissue and label the parts. Also 5

give the function of phloem tissue.

- b) Differentiate between striated muscle and cardiac muscle with reference to their site /location, structure and function in our body

OR

Draw the diagram showing a typical neuron (nerve cell) and label the parts. Also give the function of nervous tissue.

Differentiate between bone and cartilage with reference to location, strength and matrix

21. a) What is binomial nomenclature? Name the scientist who introduced this system. 5
b) In which class of vertebrate human being belongs to? Mention any four characteristic features of the class. Also mention any one exception, if any.

SECTION - B

22. In an experiment, Sudhir took a solid iron cuboid having mass 5Kg and dimensions 30cm X 20cm X 10cm. He kept the cuboid on the table. Find the force and pressure exerted by the cuboid on the table top if it lies with its face of dimensions 20cm X 10cm. 2
23. What is the velocity of a pulse for the slinky when it takes 5 seconds to travel from a point A to B and back to A? (distance between A and B is 5m) 2
24. Classify the following into homogeneous or heterogeneous mixtures. 2
a) Milk & water b) Sugar & Water c) Iron powder & Sulphur powder d) Air
25. To identify the law of conservation of mass, a student added 10ml 5% BaCl₂ solution into 10ml of 5%Na solution. 2
a) What do you observe when the solutions are mixed?
b) State the law of conservation of mass.
26. A plant was uprooted carefully and its roots were observed for the classification of the plants. How can roots help in classification? 2
27. a) A student while studying the life cycle of mosquito identified different stages. Name the different stages in sequence starting from egg. 2
b) Also name the stage in which it feeds on animal blood

End of the Question Paper